

introduced, which consists of the cheese curd and of whey. At this stage the end wall 5 of the tank 1 is closed, or in its lower position. The whey flows out through the wire 8 and the perforated surfaces of end walls 4 and 5 and possible also of the side walls 2 and 3, that is through the sieves, and the cheese curd forms on the bottom of the tank a cheese mattress 26, which may have a height of as much as 40-50 cm, or considerably more than in previously known devices. After the major part of the whey has run off, the cheese mattress 26 is prepressed with the press plate 11 to enhance the removal of whey, gases and air and to condense the cheese mattress so that cheddarizing may be initially rapidly and effectively.

After the desired degree of cheddarization has been achieved, the power cylinders 30, 31 are used to lift the end 5 of the tank 1 up, and the wire 8 is set in motion so that the cheese mattress 26 begins to move towards the left in FIG. 1. From the mattress pieces 27 are cut with the cutter 33, which have a length equal to the width of the tank. The thickness of the pieces 27 is determined by the ratio of the speeds of wire 8 and cutter 33. The pieces 27 fall upon the conveyor 14 and come into the gap between the rolls 16 and 18. The rolls squeeze the pieces so that further whey, gases and air are removed from them. At the same time the disk-like cutters 17 and 19 on the rolls 16 and 18 cut the pieces 26 up into strips. The strips come under the cutting elements 21 of the vertically movable cutter 20 and are cut across into approximately finger-sized small pieces. Since the distances between the cutting elements 21 are different, the length of the small pieces varies. Such pieces stick together better than pieces of equal size when they are later pressed together to form cheeses.

The small pieces go from above the mincing device 12 to the transversal conveyor 22, from which they are further transferred to the oblique conveyor 23, which returns the minced pieces to the initial end of the tank 1. The small pieces fall from the conveyor 23 onto transversal conveyor 24 and from this further into the salting device 25. After passage through the salting device, the small pieces fall once more into the initial end of tank 1 and form on the bottom of the tank again a cheese mattress. In order that the mattress might become uniform, a stop plate 29 is placed at the initial end of tank 1, which is adjustable in its height and which may be entirely detached from the tank. The boundary surface between unminced and minced cheese mattresses in the tank 1 is indicated by reference numeral 28. When the unminced cheese mattress has entirely left the tank 1 and returned into it in minced form, the stop plate 29 is removed and the cheese mattress is finally pressed with the aid of the press plate 11. The mattress is left under pressure for the desired length of time.

Upon completed pressing, the wire 8 is once more set in motion and the cheese mattress is cut with the cutter 33 into cheese blocks of desired size, which are received onto an appropriate conveyor (not depicted) 60

and transferred into storage to ripen.

If cheese production on a small scale is concerned, the mincing device 12, conveyors 22-24 and salting device 25 and the power cylinders 9 and 10 may be permanently mounted as in FIG. 1. But if large production is concerned, involving several tanks 1, as has been shown in FIG. 2, then it is advantageous to arrange the above-mentioned devices or part of them to be movable. The devices are moved next to the tank in connection with which they are needed at any given time. On the other hand the said devices may be stationary, but with the aid of conveyors transports are accomplished from different tanks in turn to these devices and back to the tanks.

According to the drawing the salting device 25 has been placed at the initial end of tank 1. But the salting device may also be placed immediately after the mincing device 12, that is, the conveyor extending from the ultimate to the initial end of the tank will be located between the salting device and the initial end of the tank. It is obvious to anyone skilled in the art on the basis of the foregoing that different embodiments of the invention may naturally vary within the scope of the claims presented below. It is essential from the viewpoint of the invention that a given kind of tank 1 is utilized, into which the cheese comes twice during the course of manufacturing and in which it is both times handled in the form of a continuous, large mattress.

We claim:

1. Apparatus for manufacturing cheese of the Cheddar-type comprising tank means for processing cheese having an inlet end and an outlet end, perforated means associated with said tank means for enabling fluid drainage from cheese located within said tank means, first conveyor means located within said tank means for passing cheese from within said tank means through said outlet end, press means located within said tank means for compressing a cheese mass located therein, mincing means located near said outlet end for cutting cheese which has been passed from within said tank means, salting means located exteriorly of said tank means for salting cheese, and second conveyor means for feeding cut cheese which has been discharged from said outlet end through said salting means and back to said inlet end to reintroduce said salted cheese back into said tank means whereby said cheese may be processed by being at least twice passed through said tank means.

2. Apparatus according to claim 1, wherein said first conveyor means comprises a movably driven perforated endless conveyor belt forming within said tank means a bottom surface upon which said cheese is supported, and wherein said press means comprise a pressure plate located above said first conveyor means and actuatable to compress said cheese against said perforated endless belt.

3. Apparatus according to claim 1, wherein said salting means is located proximate said inlet end of said tank means.

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